Annual Environmental Report

2024

Ballina

D0016-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2024 AER

This Annual Environmental Report has been prepared for D0016-01, Ballina, in Mayo in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports where relevant are included as an appendix to the AER.

1.1 ANNUAL STATEMENT OF MEASURES

A summary of any improvements undertaken is provided where applicable.

1.2 TREATMENT SUMMARY

The agglomeration is served by a wastewater treatment plant(s)

- Ballina (Mayo) WWTP with a Plant Capacity PE of 25000, the treatment type is 3P - Tertiary P removal .

1.3 ELV OVERVIEW

The overall compliance of the final effluent with the Emission Limit Values (ELVs) is shown below. More detailed information on the below ELV's can be found in Section 2.

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF2200D0016SW001	Ballina (Mayo) WWTP	Treated	Non-Compliant	Total Nitrogen mg/l

1.4 LICENCE SPECIFIC REPORTING

Assessment / Report
Toxicity of Final Effluent

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 BALLINA (MAYO) WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - BALLINA (MAYO) WWTP

A summary of influent monitoring for the treatment plant is presented below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

Parameters	Number of Samples	Annual Max	Annual Mean
Suspended Solids mg/l	12	456	241
COD-Cr mg/l	12	2796	645
BOD, 5 days with Inhibition (Carbonaceo mg/l	12	726	280
Total Nitrogen mg/l	12	66	40
Hydraulic Capacity	N/A	10548	6446

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 2.1.5 if applicable.

Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity. The annual maximum hydraulic loading is less than the peak Treatment Plant Capacity. Further details on the plant capacity and efficiency can be found under the sectional 'Operational Performance Summary'. The design of the wastewater treatment plant allows for peak values and therefore the peak loads have not impacted on compliance with Emission Limit Values.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF2200D0016SW001

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
COD-Cr mg/l	125	250	N/A	12	N/A	N/A	22	Pass
Suspended Solids mg/l	35	87.5	N/A	12	N/A	N/A	5.28	Pass
BOD, 5 days with Inhibition (Carbonaceo mg/l	25	50	N/A	12	N/A	N/A	1.94	Pass
Total Nitrogen mg/l	15	18	N/A	12	4	3	13	Fail
Ammonia-Total (as N) mg/l	10	12	N/A	12	N/A	N/A	0.540	Pass
pH pH units	9	9	N/A	12	N/A	N/A	7.87	Pass
ortho-Phosphate (as P) - unspecified mg/l	5	6	N/A	12	N/A	N/A	0.552	Pass
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	12	N/A	N/A	0.731	

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Conductivity @20°C µS/cm	N/A	N/A	N/A	12	N/A	N/A	671	
Nitrate (as N) mg/l	N/A	N/A	N/A	12	N/A	N/A	11	
E. Coli MPN/100ml	N/A	N/A	N/A	2	N/A	N/A	14317	
Enterococci (Intestinal) cfu/100ml	N/A	N/A	N/A	2	N/A	N/A	3613	
Faecal coliforms no./100mls	N/A	N/A	N/A	2	N/A	N/A	12310	
Nitrite (as N) mg/l	N/A	N/A	N/A	12	N/A	N/A	0.321	

Notes:
1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 – For pH the WWDA specifies a range of pH 6 - 9

Cause of Exceedance(s):

Refer to incident Section of the report.

Significance of Results:

The WWTP is non complaint with the ELVs set in the Wastewater Discharge Licence. The impact on receiving waters in assessed further in Section 2.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF2200D0016SW001

A summary of monitoring from ambient monitoring points associated with the wastewater discharge is provided in the sections below. For discharges to rivers upstream (U/S) and downstream (D/S) location data is provided. For other ambient points in lakes, coastal or transitional waters, monitoring data from the most appropriate monitoring station is selected.

The table below provides details of ambient monitoring locations and details of any designations as sensitive areas.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	River Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Ecological Status
Upstream	125292, 319885	TW22005298MY1012	No	No	No	No	Moderate
Downstream	125292, 320420	TW22005298MY1013	No	No	No	No	Moderate

The results for ambient results and / or additional monitoring data sets are included in the **Appendix 7.1 - Ambient monitoring summary**

Significance of Results:

The coastal/transitional ambient monitoring results meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence for the following: Total Nitrogen mg/l.

The ambient monitoring results do not meet the required EQS at the upstream monitoring location. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

The discharge from the wastewater treatment plant does not have an observable impact on the water quality.

A deterioration in water quality has been identified, however it is not known if it or is not caused by the WWTP.

Other causes of deterioration in water quality in the area are unknown.

The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - BALLINA (MAYO) WWTP

2.1.4.1 Treatment Efficiency Report - Ballina (Mayo) WWTP

Treatment efficiency is based on the removal of key pollutants from the influent wastewater by the treatment plant. In essence the calculation is based on the balance of load coming into the plant versus the load leaving the plant. The efficiency is presented as a percentage removal rate.

A summary presentation of the efficiency of the treatment process including information for all the parameters specified in the licence is included below:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
cBOD	659611	5901	99
COD	1516337	68257	96
SS	567252	16079	97
TP	N/A	2228	N/A
TN	94725	40501	57

Note: The above data is based on sample results for the number of dates reported

2.1.4.2 Treatment Capacity Report Summary - Ballina (Mayo) WWTP

Treatment capacity is an assessment of the hydraulic (flow) and organic (the amount of pollutants) load a treatment plant is designed to treat versus the current loading of that plant.

Ballina (Mayo) WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	13620
DWF to the Treatment Plant (m^3/day)	4540
Current Hydraulic Loading - annual max (m^3/day)	10548

Ballina (Mayo) WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	6445.67
Organic Capacity (PE) - As Constructed	25000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	14840
Organic Capacity (PE) - Remaining	10160
Will the capacity be exceeded in the next three years? (Yes/No)	No

Nominal design capacities can be based on conservative design principles. In some cases assessment of existing plants has shown organic capacities significantly higher than the nominal design capacity. Accordingly plants that appear to be overloaded when comparing a collected peak load with the nominal design capacity can be fully compliant due to the safety factors in the original design.

2.1.5 SLUDGE / OTHER INPUTS - BALLINA (MAYO) WWTP

'Other inputs' to the waste water treatment plant are summarised in table below

Input type	Quantity	Unit	P.E.	% of load to WWTP	Included in Influent Monitoring (Y/N)?	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)
Other	5504	Volume (m3)	67	1.1	Yes	No	Yes
Landfill Leachate (delivered by tanker)	61068	Volume (m3)	744	0.03	Yes	No	Yes

3 COMPLAINTS AND INCIDENTS

3.1 COMPLAINTS SUMMARY

A summary of complaints of an environmental nature related to the discharge(s) to water from the WWTP and network is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2024.			

3.2 REPORTED INCIDENTS SUMMARY

Environmental incidents that arise in an agglomeration are reported on an on-going basis in accordance with our waste water discharge licences. Where an incident occurs and it is reportable under the licence, it is reported to the Environmental Protection Agency through their Environmental Data Exchange Network, or in some instances by telephone. Some incidents which arise in the agglomeration are recorded by Uisce Éireann but may not be reportable under our licence for example where the incident does not have an impact on environmental performance.

A summary of reported incidents is included below.

3.2.1 SUMMARY OF INCIDENTS

Incident Type	Cause	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Emergency overflow caused by power failure	No	Yes
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	Yes
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	Yes

Incident Type	Cause	Recurring (Y/N)	Closed (Y/N)
Abatement equipment off-line	Adverse Weather	No	Yes
Uncontrolled release	WWTP biological sludge issue	No	Yes
Uncontrolled release	Plant or equipment breakdown at WWTP	No	Yes
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	Yes
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	Yes
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	Yes
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	Yes
Uncontrolled release	Plant or equipment breakdown at WWTP	No	No
Breach of ELV	WWTP upgrade required to meet ELV	Yes	No
Abatement Equipment offline	Screen maintenance issue	No	Yes
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	Yes
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	Yes
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	Yes
Uncontrolled release	Network Infrastructure	Yes	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2024	17
Number of Incidents reported to the EPA via EDEN in 2024	17
Explanation of any discrepancies between the two numbers above	N/A

4 INFRASTRUCTURAL ASSESSMENTS AND PROGRAMME OF IMPROVEMENTS

4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT

A summary of the operation of the storm water overflows and their significance where known is included below:

4.1.1 SWO IDENTIFICATION

WWDL Name / Code for Storm Water Overflow (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2024 (No. of events)	Total volume discharged in 2024 (m3)	Monitoring Status
SW003	124858, 318960	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW006	124599, 318714	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW010	123299, 321077	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW2	124978, 319144	Yes	Low Significance	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW4	125420, 319502	Yes	Low Significance	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW5	125065, 319275	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored

WWDL Name / Code for Storm Water Overflow (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2024 (No. of events)	Total volume discharged in 2024 (m3)	Monitoring Status
SW6	124855, 319021	Yes	Low Significance	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW7	124617, 318768	Yes	Low Significance	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW8	124676, 318755	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW9	124630, 318667	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	123870, 316709	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
TBC	124855, 319021	Yes	Low Significance	Not Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	124015, 317622	Yes	Low Significance	Not Meeting Criteria	Unknown	Unknown	Monitored
TBC	-, -	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored

The contents presented in this table include the most up to date information available at the time of writing. Any TBC SWO(s) were identified as part of the on-going National SWO programme and will be updated in subsequent AER(s) once the information is confirmed.

SWO Summary	
How much wastewater discharge by metered SWOs during the year (m3)?	Unknown

SWO Summary	
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO Assessment included the requirements of relevant of WWDL schedules?	No
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	N/A

4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS.

4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides a list of the various reports required for this agglomeration and a brief summary of their recommendations.

Specified Improvement Programmes (under Schedule A and C of WWDL)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
D0016-SIP:01	Upgrade SWOs to comply with DoE criteria (SW2)	C	31/12/2011	Yes	Works Completed		
D0016-SIP:02	Upgrading of pumping station at Bachelor's Walk (SW2)	C	01/05/2009	Yes	Works Completed		

A summary of the status of any other improvements identified by under Condition 5 assessments- is included below.

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
No additional improvements planned at this time.				

4.2.3 SEWER INTEGRITY RISK ASSESSMENT

The utilisation of multiple capital maintenance programmes and the outputs of the workshops with the Local Authority Operations Staff held under the programme can be used to satisfy the requirements of Condition 5 regarding network integrity. Improvement works identified by way of these programmes and workshops will be included in the Improvements Summary Tables 4.2.1 and 4.2.2.

5 LICENCE SPECIFIC REPORTS

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides a list of the various reports required for this agglomeration and a brief summary of their recommendations.

Licence Specific Report	Required by licence	Included in this AER
D0016-01-Toxicity of Final Effluent	Yes	Yes

6 CERTIFICATION AND SIGN OFF

6.1 SUMMARY OF AER CONTENTS

Parameter	Answer
Does the AER include an Executive Summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements and or Environmental Quality Standards)?	Yes
Is there a need to advise the EPA for Consideration of a Technical Amendment/Review of the Licence?	N/A
List reason e.g. additional SWO identified	N/A
Is there a need to request/advise the EPA of any modification to the existing WWDL with respect to condition 4 changes to monitoring location, frequency etc	N/A
List reason e.g. changes to monitoring requirements	N/A
Have these processes commenced?	N/A
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	Yes

I certify that the information given in this Annual Environmental Report is truthful, accurate and complete:

Signed: Date: 01/05/2025

This AER has been produced by Uisce Éireann's Environmental Information System (EIMS) and has been electronically signed off in that system for and on behalf of ,

Eleanor Roche

Head of Environmental Regulation.

7 APPENDIX

Appendix
Appendix 7.1 - Ambient monitoring summary
Appendix 7.2 - Toxicity of Final Effluent

Ballina WWTP

Ambient Monitoring Points from WWDL (or as agreed by EPA)	Irish Grid Reference	EPA Feature Coding Tool code	Receiving Waters Designation (Y/N)				WFD Status
			Bathing Water	Drinking Water	FWPM	Shellfish	
Upstream Monitoring Station	125292,319885	TW22005298MY1012	No	No	No	No	Moderate
Downstream Monitoring Station	125292, 320420	TW22005298MY1013	No	No	No	No	Moderate

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS (mean)	% EQS
cBOD mg/l	125292,319885	1.0	125292, 320420	1	1.5	0
Ortho-Phosphate (as P) mg/l	125292,319885	0.012	125292, 320420	0.015	0.035	-8.5
Ammonia (as N) mg/l	125292,319885	0.042	125292, 320420	0.025	0.065	-26.1

County	Licence Ref.	Agglomeration	Receiving Water B	Monitoring Location	Monitoring Result Source	Date	pH	Temperature (°C)	BOD mg/l	COD mg/l	SS mg/l	Total Nitrogen (as N) mg/l	Total Phosphorus (as P) mg/l	Ammonia (as N) mg/l	Orthophosphate (as P) mg/l	Dissolved Oxygen mg/l	Total Oxidised Nitrogen (as N) me/l	Dissolved Inorganic Nitrogen (as N) me/l	Faecal Coliforms cfu/100ml	Escherichia coli cfu/100ml	Intestinal Enterococci cfu/100ml	Visual Inspection	SSRS	Water level	Conductivity	Nitrate	Chloride	Fluoride	Ammonium (NH4)	Major anions	Major Cations	Priority Subs	Metals & Organic Compounds	Salinity		Nitrite	Chlorophyll	Conductivity @20	Chloride	Fluoride	Calcium	Iron	Magnesium	Potassium	Sodium	Sulphate
Mayo	D0016-01	Ballina	River Moy	**Number of samples Required**			12	12	12	0	0	12	0	12	0	0	0	0	12	12	12	0	0	12	12	12	12	12	0	2	0	As require	0	0		0	0									
Issued on	22/04/2009			Upstream: SW1u (E25292 N19885)																																										
				Downstream:SW1d (E25165 N20420)																																										
				Upstream	Grab	12-Jan-2024	7.7	6.6	< 1		< 4			< 0.02	< 0.01	10.8																															
				Downstream	Grab	12-Jan-2024	7.6	6.2	< 1		< 4			< 0.02	0.02	8.4																															
				Upstream	Grab	15-May-2024	7.5	15.4	< 1		< 4			0.08	0.02	8.4																															
				Downstream	Grab	15-May-2024	7.5	15.2	< 1		5			< 0.02	0.02	9.1																															
				Upstream	Grab	27-Sep-2024	8	10.9	< 1		< 4			0.03	< 0.01	10.6																															
				Downstream	Grab	27-Sep-2024	7.5	11.2	< 1		< 4			< 0.02	< 0.01	10.6																															
				Upstream	Grab	14-Nov-2024	7.3	11.2	< 1		< 4			0.04	< 0.01	9.8																															
				Downstream	Grab	14-Nov-2024	7.3	11.3	< 1		< 4			0.04	< 0.01	8.3																															

ANALYSIS REPORT

CUSTOMER:	**Uisce Eireann**	**SAMPLE TYPE:**	Effluent
LOCAL AUTHORITY	Mayo County Council	**CONDITION OF SAMPLE ON RECEIPT:**	Satisfactory
		DATE RECEIVED:	15th August 2024
REPORT TO:	Jackie O Hara	**DATE REPORTED:**	12th November 2024
SAMPLED BY:	Stephen Curley SSS Ltd	**WORK NO.:**	**24-47328 (Note 6)**
		PROPOSAL NO:	

Sample Details

Southern Scientific Services Limited requested toxicity testing on their sample in August 2024.
A sample named '140536'' arrived at ENVA laboratory in Cork for testing.
The sample was to be tested on the following species:

- 30 Minutes EC50 to Vibrio fischeri
- 48 Hours LC50 to Brachionus plicatilis

Methods

Method 1: ENVCM.136: Based on ISO 11348-3:2007 Determination of the inhibitory effect of water sample on the light emission of Vibrio fischeri. ISO 11348 describes three methods for determining the inhibition of the luminescence emitted by the marine bacterium Vibrio fischeri (NRRL B11177). ISO 11348-3:2007 specifies a method using freeze dried bacteria. This method is applicable to wastewater, fresh water (surface and ground water), sea and brackish water.

Method 2: ENVCM.137: Rotifer Brachionus plicatilis: Based on ASTM E1440-91. This method describes procedures for obtaining laboratory data concerning the acute toxicity of chemicals and aqueous effluents released into estuarine or marine waters. Acute toxicity is measured by exposing Brachionus newly hatched from cysts to a series of toxicant concentrations under controlled conditions.

Sample Information

Sampled By	Customer
Sampling Procedure	Composite
Storage Conditions	Refrigerated
Temperature (°C)	25
pH (at 25°C)	8.84
Dissolved Oxygen (mg/L)	9.04
Dissolved Oxygen (% Saturation)	94
Conductivity (µs/cm at 25°C)	537

OUR REF: RP **2024| Uisce Eireann –24-47328 | (Rev 00)**

Aquatic Toxicity Test Results

Test Parameters	Concentration (% Vol./Vol.)	Toxic Units	95% Confidence Limits (% Vol./Vol.)	Method of Calculation
30 min EC50 to *Vibrio fischeri*	>100	**<1**	N/A	Microtox
48 hour LC50 to *Brachionus plicatilis*	>100	**<1**	N/A	Rotifer LC50 Calculation Programme

Conclusions

All tests performed were deemed to be valid as they met all the criteria specified in the guidelines.

Conor Murphy

_____

Conor Murphy
Operations Manager

Index to symbols used:

Note 6	Analysis carried out by external laboratory.

- **The results relate only to the items tested.**
- **The analysis report shall not be reproduced except in full without written approval of the laboratory.**